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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO

EXAMINER	
ART UNIT	PAPER NUMBER
	5

DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)	
	09/614,649	ARQUIN ET AL.	
	Examiner	Art Unit	
	Jason M. Greene	1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-38 is/are rejected.

7)☒ Claim(s) 31 and 32 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 12 July 2000 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

4) ☐ Interview Summary (PTO-413) Paper No(s). _____

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Drawings

2. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

3. The drawings are objected to because the reference characters 100, 202, 210, 302, and 303 in Fig. 1 are enclosed within outlines, e.g. encircled, and are not oriented in the same direction as the view. See 37 CFR 1.84(p)(1). Correction is required.

4. The drawings are objected to because the view numbers are not preceded by the abbreviation "FIG.". See 37 CFR 1.84(u)(1). Correction is required.

5. The drawings are objected to because the numbers used for reference characters 202, 210, 302, and 303 are larger than the number used for view 1. See 37 CFR 1.84(u)(2). Correction is required.

Claim Objections

6. Claims 31 and 32 are objected to because of the following informalities: Claims 31 and 32 are dependent upon claim 20, however, it appears as though the claims were intended to be dependent upon claim 30. Appropriate correction is required. For examination purposes, claims 31 and 32 were assumed to depend upon claim 21.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 31 and 32 rejected under 35 U.S.C. 112, second paragraph, as being

Claim 31 recites the limitation "said temperature sensor" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 32 recites the limitation "said getter vessel" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1, 2, 4, and 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Snow et al.

With regard to claim 1, Snow et al. discloses a gas purification providing hydrogen sorption and particulate filtering comprising a hydrogen sponge (90) including hydrogen sorption material, a particulate filtering device (100), and an enclosure having

particulate filter device" said hydrogen sponge proximal to said inlet, said inlet

proximal to said outlet, said hydrogen sponge and said particulate filter device arranged within said enclosure such that a gas flowing into said enclosure via said inlet and out of said enclosure via said outlet must follow a flow path first contacting said hydrogen sorption material and then flowing through the particulate filtering device in Figs. 2(d) and 2(e), col. 2, lines 3-53, col. 3, line 62 to col. 4, line 35, and col. 9, lines 18-35.

With regard to claims 2 and 4, Snow et al. discloses the particulate filtering device being manufactured from sintered nickel in col. 6, lines 44-47.

With regard to claim 7, Snow et al. discloses the filtering element being a disk shape in Figs 2(d) and 2(e) and col. 5, lines 22-28.

With regard to claim 8, Snow et al. discloses the hydrogen sorption material being an alloy of zirconium, nickel, and titanium in col. 6, lines 21-43.

With regard to claim 9, Snow et al. discloses the hydrogen sorption material being a non-evaporative getter alloy of zirconium-vanadium-iron in col. 3, lines 1-5.

11. Claims 11, 12, 14, and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Snow et al.

With regard to claim 11, Snow et al. discloses a method for purifying a gas suitable for purifying a gas to a level of purity sufficient for semiconductor manufacturing, the method comprising the acts of cooling a gas to room temperature, flowing a gas under pressure into a gas purification system enclosure via an inlet, contacting said gas under pressure with a hydrogen sponge disposed within said gas purification system enclosure, flowing said gas through a particulate filtering device disposed within said gas purification system enclosure, and flowing said gas out of said gas purification system enclosure via an outlet in col. 2, lines 29-45 and col. 6, lines 26-39.

Since the prior art is seen as disclosing a specific example of the temperature lying within the claimed range of less than 100 ^{O}C, this claim is anticipated.

With regard to claims 12 and 14, Snow et al. discloses the particulate filtering device being manufactured from sintered nickel in col. 6, lines 44-47.

With regard to claim 17, Snow et al. discloses the filtering element being a disk shape in Figs 2(d) and 2(e) and col. 5, lines 22-28.

With regard to claim 18, Snow et al. discloses the hydrogen sorption material being an alloy of zirconium, nickel, and titanium in col. 6, lines 21-43.

With regard to claim 19, Snow et al. discloses the hydrogen sorption material being a non-evaporative getter alloy of zirconium-vanadium-iron in col. 3, lines 1-5.

12. Claims 21, 28, 29 are rejected under 35 U.S.C. 102(b) as being anticipated by UK Patent Application GB 2 177 079 A.

With regard to claim 21, UK Patent Application GB 2 177 079 A discloses a heated getter vessel comprising a gas heating device (6, top of 3,16), a quantity of gas purification material (4), a quantity of barrier material (15), an enclosure (3,14) having an inlet (1) and an outlet (2), said enclosure housing said gas purification material and said gas heating device, said gas heating device proximal to the inlet, said barrier material proximal to the outlet, said gas purification material disposed between said gas heating device and said barrier material, said gas heating device, gas purification material, and said barrier material arranged within said enclosure such that a gas flowing into said enclosure via said inlet and out of said enclosure via said outlet must follow a flow path first through said gas heating device then contacting said gas purification material then flowing through said barrier material in Fig. 3 and page 4, lines 31-58.

With regard to claim 28, UK Patent Application GB 2 177 079 A discloses the gas

With regard to claim 29, UK Patent Application GB 2 177 079 A discloses the quantity of barrier material including a quantity of stainless steel shot in page 4, lines 42-47.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snow et al.

With regard to claim 3, Snow et al. discloses the particle filtering device being able to remove particles from the outlet gas flow up to 0.1 micron in col. 6, lines 49-53.

Since the prior art is seen as overlapping the claimed range of as small as 0.003 micron, a prima facie case of obviousness exists which must be overcome through a showing of unexpected or unobvious results

time the invention was made to adjust the diameter of the sintered together particles to

manufacture a filtering device capable of arresting particles of a certain size, as is well known in the art.

With regard to claim 5, Snow et al. discloses the particulate filtering device being comprised of a plurality of filtering elements in col. 4, lines 15-35.

Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to duplicate the downstream filtering device of Snow et al. in that duplicating parts for a multiplied effect is merely a choice of design. See St. Regis Paper Co. v. Bemis Co., Inc., 193 USPQ 8, 11.

15. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snow et al. in view of Whitlock et al.

Snow et al. does not disclose the filtering element having a conical shape.

Whitlock discloses a similar sintered metal filter having a conical shape in col. 2, line 66 to col. 3, line 11.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the conical filter shape of Whitlock et al. into the system of Snow et al. to increase the surface area of the filter available to the gas stream, as is well known in the art.

Furthermore, it would have been obvious to one of ordinary skill in the art at the

16. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snow et al. in view of Bourne et al.

Snow et al. does not disclose the gas purification system further comprising a temperature measuring device.

Bourne et al. discloses using a temperature measuring device to measure the temperature inside a getter in col. 6, lines 37-45.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the temperature measuring device of Bourne et al. into the system of Snow et al. to allow the temperature of the getter material to be controlled, as suggested by Bourne et al. in col. 6, lines 37-45.

17. Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snow et al.

With regard to claim 13, Snow et al. discloses the particle filtering device being able to remove particles from the outlet gas flow up to 0.1 micron in col. 6, lines 49-53.

Since the prior art is seen as overlapping the claimed range of as small as 0.003 micron, a prima facie case of obviousness exists which must be overcome through a showing of unexpected or unobvious results.

[illegible] the invention was made to adjust the diameter of the sintered [illegible]

manufacture a filtering device capable of arresting particles of a certain size, as is well known in the art.

With regard to claim 15, Snow et al. discloses the particulate filtering device being comprised of a plurality of filtering elements in col. 4, lines 15-35.

Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to duplicate the downstream filtering device of Snow et al. in that duplicating parts for a multiplied effect is merely a choice of design. See St. Regis Paper Co. v. Bemis Co., Inc., 193 USPQ 8, 11.

18. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snow et al. in view of Whitlock et al.

Snow et al. does not disclose the filtering element having a cylindrical shape.

Whitlock discloses a similar sintered metal filter having a cylindrical shape in col. 2, line 66 to col. 3, line 11.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the cylindrical filter shape of Whitlock et al. into the system of Snow et al. to increase the surface area of the filter available to the gas stream, as is well known in the art.

Furthermore, it would have been obvious to one of ordinary skill in the art at the

19. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snow et al. in view of Bourne et al.

Snow et al. does not disclose the gas purification method further comprising monitoring the temperature of the hydrogen sorption material.

Bourne et al. discloses using a temperature measuring device to measure the temperature inside a gas sorption material in col. 6, lines 37-45.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the temperature measuring step of Bourne et al. into the method of Snow et al. to allow the temperature of the getter material to be controlled, as suggested by Bourne et al. in col. 6, lines 37-45.

20. Claims 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over UK Patent Application GB 2 177 079 A in view of Goldstein.

With regard to claim 22, UK Patent Application GB 2 177 079 A discloses a heated getter vessel wherein the gas heating device includes a gas heater body (top of 3), a heat source (6), a gas passage (1), a first annular volume (3), and a second annular volume (16), wherein said gas heater body, said gas passage, said first annular volume, and said second annular volume are arranged within said getter vessel (3) such

assage

annular volume is in fluid communication with said second annular volume, said second annular volume is in fluid communication with an internal volume defined by said getter vessel enclosure, such that a gas flowing into said enclosure via said inlet flows from said inlet through said gas passage, then through said first annular volume, then through said second annular volume and exits said gas heating device into said getter vessel enclosure in Fig. 3 and page 4, lines 31-58.

UK Patent Application GB 2 177 079 A does not disclose the heated getter vessel having a plurality of gas passages.

Goldstein discloses a similar getter vessel having a plurality of gas passages (180) in Fig. 1.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the plurality if gas passages of Goldstein into the getter vessel of UK Patent Application GB 2 177 079 A to more evenly distribute the gas entering the vessel to ensure even heating of the gas, as is well known in the art.

With regard to claim 23, UK Patent Application GB 2 177 079 A discloses the heat source including a plurality of heat sources (6,21) in Fig. 3.

Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to duplicate the heating element (6) of UK Patent Application GB 2 177 079 A in that duplicating parts for a multiplied effect is merely a

With regard to claim 24, UK Patent Application GB 2 177 079 A discloses at least one heat source (6) being in contact with at least a portion of the gas heater body (14) in Fig. 3.

With regard to claim 25, UK Patent Application GB 2 177 079 A discloses at least one heat source (6,21) being in contact with at least a portion of the getter vessel enclosure (3,14) in Fig. 3.

21. Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over UK Patent Application GB 2 177 079 A in view of Carrea et al.

With regard to claims 26 and 27, UK Patent Application GB 2 177 079 A does not disclose the gas purification material including a plurality of types of gas purification material or the gas purification material being selected from the group consisting of zirconium, palladium, platinum, rhodium, ruthenium, nickel, titanium, and alloys thereof.

Carrea et al. discloses a similar getter vessel having a plurality of types of gas purification materials (34,38) including a titanium alloy in Fig. 2 and col. 4, lines 8-46.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the plurality of purification materials including the titanium/nickel alloy to allow several different gasses to be adsorbed, including

22. Claims 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over UK Patent Application GB 2 177 079 A in view of Bourne et al.

With regard to claims 30 and 31, UK Patent Application GB 2 177 079 A does not disclose the gas purification system further comprising a temperature measuring device.

Bourne et al. discloses using a temperature measuring device to measure the temperature inside a getter in col. 6, lines 37-45.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the temperature measuring device of Bourne et al. into the system of UK Patent Application GB 2 177 079 A to allow the temperature of the getter material to be controlled, as suggested by Bourne et al. in col. 6, lines 37-45.

UK Patent Application GB 2 177 079 A and Bourne et al. do not disclose the temperature sensor being operable to detect a temperature rise of 10 degrees per millisecond.

Temperature sensors having different response rates are well known in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a temperature sensor having the appropriate response rate to insure that the temperature reported by the sensor is accurate, as is well known in the art.

With regard to claim 32, UK Patent Application GB 2 177 079 A and Bourne et al. do not disclose the getter vessel further comprising an outlet filter proximal to the outlet of said getter vessel.

Carrea et al. discloses a similar getter vessel having an outlet filter (22) proximal to the outlet of said getter vessel in Fig. 1 and col. 3, lines 35-37.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the outlet filter of Carrea et al. into the getter vessel of UK Patent Application GB 2 177 079 A and Bourne et al. to remove any particles present in the gas flow, as suggested by Carrea et al. in col. 3, lines 35-37

23. Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over UK Patent Application GB 2 177 079 A and Carrea et al. in view of Snow et al.

UK Patent Application GB 2 177 079 A and Carrea et al. do not disclose the outlet filter being a sintered stainless steel or sintered nickel filter or the filter including a disk shaped filter or a cylindrical shaped filter.

Snow et al. discloses a similar outlet filter being a sintered nickel filter having a disk shape in Figs. 2(d) and 2(e) and col. 2, lines 3-28.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the metal filter of Snow et al. into the vessel of UK Patent Application GB 2 177 079 A and Carrea et al. to prevent outgassing and

24. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over UK Patent Application GB 2 177 079 A in view of Bourne et al.

UK Patent Application GB 2 177 079 A discloses a method for purifying a gas comprising heating a gas with a heating device (6), contacting said heated gas to a quantity of gas purification material (4), wherein said gas purification material is operative to substantially remove impurities from said heated gas, and providing a barrier layer (15), wherein said barrier layer has a quantity of barrier material operative to react with a portion of said gas purification material in Fig. 3 and page 4, lines 31-58.

UK Patent Application GB 2 177 079 A does not disclose measuring said heated gas temperature utilizing a temperature sensor disposed in at least a portion of the purification material.

Bourne et al. discloses using a temperature measuring device to measure the temperature inside a getter in col. 6, lines 37-45.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the temperature measuring device of Bourne et al. into the system of UK Patent Application GB 2 177 079 A to allow the temperature of the getter material to be controlled, as suggested by Bourne et al. in col. 6, lines 37-45.

25. Claims 36-38 is rejected under 35 U.S.C. 103(a) as being unpatentable over UK Patent Application GB 2 177 079 A in view of Carrea et al. and Snow et al.

With regard to claim 36, UK Patent Application GB 2 177 079 A discloses a gas purification system comprising a heated getter vessel having an inlet (1), an outlet (2), and a heat source (6) in Fig. 3 and page 4. lines 31-58.

UK Patent Application GB 2 177 079 A does not disclose the gas purification system comprising a system inlet and a system outlet, a gas to gas heat exchanger having a cool gas inlet, a preheated gas outlet, a heated gas inlet, and a precooled gas outlet, a gas to air heat exchanger having a precooled gas inlet and a cooled gas outlet, an integrated hydrogen sorption and particle filter having an inlet and an outlet, said system inlet in fluid communication with said cool gas inlet on said gas to gas heat exchanger, said preheated gas outlet on said gas to gas heat exchanger in fluid communication with said inlet on said heated getter vessel, said outlet on said heated getter vessel in fluid communication with said heated gas inlet on said gas to gas heat exchanger, said precooled gas outlet on said gas to gas heat exchanger in fluid communication with said inlet on said precooled gas inlet on said gas to air heat exchanger, said cooled gas outlet on said gas to air heat exchanger in fluid communication with said inlet on said integrated hydrogen sorption and particulate filter, or said outlet on said integrated hydrogen sorption and particle filter in fluid communication with said system outlet.

Carrea et al. discloses a gas purification system comprising a system inlet (10) and a system outlet (not numbered, downstream of 22), a gas to gas heat exchanger

gas inlet (18) and a cooled gas outlet (not numbered, upstream of 22), a particle filter (22) having an inlet and an outlet, said system inlet (10)in fluid communication with said cool gas inlet (12) on said gas to gas heat exchanger, said preheated gas outlet (12) on said gas to gas heat exchanger in fluid communication with said inlet (12) on said heated getter vessel, said outlet (18) on said heated getter vessel in fluid communication with said heated gas inlet (18) on said gas to gas heat exchanger, said precooled gas outlet (18) on said gas to gas heat exchanger in fluid communication with said inlet (18) on said precooled gas inlet on said gas to air heat exchanger (20), said cooled gas outlet (not numbered, upstream of 22) on said gas to air heat exchanger in fluid communication with said inlet on said particulate filter (22), or said outlet on said particle filter (22) in fluid communication with said system outlet in Fig. 1 and col. 3, lines 20-44.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the heat exchangers of Carrea et al. into the system of UK Patent Application GB 2 177 079 A to recover the heat in the gas stream exiting the heated getter vessel to preheat the gas stream entering the heated getter vessel to reduce the amount of energy required to heat the gas entering the getter vessel and to reduce the amount of cooling required for the heated gas stream exiting the getter vessel, as suggested by Carrea et al. in col. 3, lines 10-19.

UK Patent Application GB 2 177 079 A and Carrea do not disclose the filter

Snow et al. discloses a similar filter being an integrated hydrogen sorption and particle filter in col. 2, lines 3-53 and col. 4, lines 15-35.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the integrated hydrogen sorption and particle filter of Snow et al. into the system of UK Patent Application GB 2 177 079 A and Carrea to ensure that contaminant gases and particles are prevented from escaping into downstream processing, as suggested by Snow et al. in col. 3, line 63 to col. 4, line 14.

With regard to claim 37, UK Patent Application GB 2 177 079 A discloses a heated getter vessel comprising a gas heating device (6, top of 3,16), a quantity of gas purification material (4), a quantity of barrier material (15), an enclosure (3,14) having an inlet (1) and an outlet (2), said enclosure housing said gas purification material and said gas heating device, said gas heating device proximal to the inlet, said barrier material proximal to the outlet, said gas purification material disposed between said gas heating device and said barrier material, said gas heating device, gas purification material, and said barrier material arranged within said enclosure such that a gas flowing into said enclosure via said inlet and out of said enclosure via said outlet must follow a flow path first through said gas heating device then contacting said gas purification material then flowing through said barrier material in Fig. 3 and page 4, lines 31-58.

With regard to claim 38, Snow et al. discloses a gas purification providing hydrogen sorption and particulate filtering comprising a hydrogen sponge (90) including hydrogen sorption material, a particulate filtering device (100), and an enclosure having an inlet and an outlet, said enclosure housing said hydrogen sponge and said particulate filter device, said hydrogen sponge proximal to said inlet, said filter device proximal to said outlet, said hydrogen sponge and said particulate filter device arranged within said enclosure such that a gas flowing into said enclosure via said inlet and out of said enclosure via said outlet must follow a flow path first contacting said hydrogen sorption material and then flowing through the particulate filtering device in Figs. 2(d) and 2(e), col. 2, lines 3-53, col. 3, line 62 to col. 4, line 35, and col. 9, lines 18-35.

Conclusion

26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Lorimer et al. '204, Lorimer et al. '105, Lorimer et al. '685, Succi et al., Briesacher et al. '725, Briesacher et al. '469, and Davis references disclose similar gas purification and filtration systems.

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Greene whose telephone number is (703)

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Simmons can be reached on (703) 308-1972. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7718 for regular communications and (703) 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Jason M. Greene
Examiner
Art Unit 1724

jmg
September 26, 2001